G. F. Filley MD
#1021

VETERANS ADMINISTRATION
HOSPITAL
150 MUIR ROAD
MARTINEZ, CALIFORNIA 94553

AMERICAN REVOLUTION BICENTENNIAL 1776-1976

IN REPLY REFER TO:

David Stone, Ph.D.
Associate Research Director
Council For Tobacco Research - U.S.A., Inc.
110 East 59th Street
New York, New York 10022

Dear Doctor Stone:

I have read and evaluated the grant request of Giles F. Filley, M.D., "Human Pulmonary Surfactant Function In Situ". Let me say I am delighted with his innovative approaches, but I must weigh this against his naievete.

His proposal had three main parts. The first dealt with the distribution of the alveolar lining material in human lungs post-mortem. He is fully aware that preservation in situ of pulmonary surfactant has never been satisfactorily accomplished. Some observers have had partial success. One of the major problems is that the lipoprotein surfactant is readily soluble in glutaraldehyde as well as the dehydrating agent alcohol. Thus to use these agents to fix and dehydrate in preparation for electron microscopy, despite his innovative method, is open to question. He must prove that 1) No loss of surfactant occurrs in his fixation or dehydration process and more difficulty 2) No change in distribution during the same preparation. He has given no protocol on how he intends to insure these two features. Thus I find this portion unrealistic.

The second phase of his study seems more obtainable. The measurement of PV characteristics of small airways with and after removal of surfactant appears to hold genuine possibility of giving meaningful data. I am in favor of this portion of the protocol.

The third portion deals with the wettability and adhesiveness of pulmonary surfactant on dissected lung tissues. He proposes to suspend thin slices of alveolar tissues or small airways in a Wilhelmy film balance with the tissue substituting for the usual platinum float. He will attempt to estimate wettability by measuring the contact angle of surfactant solution and the suspended tissue. I find this portion of his proposal least acceptable. The cut surfaces

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of "alveolar tissue" would be next to impossible to suspend, to wash free of surfactant layers, to keep free from edema and trauma and denaturation. In addition the contact angle reflects the surface activity of the surfactant fluid as well as the wettability of the traumatized tissue. Sorting these factors out is worthy of Solomon.

In general, I was delighted by his innovative approaches. I feel that several phases are excellent and the others could be eliminated. I hope this will be helpful.

Sincerely,

Theodore N. Finley MD

Theodore N. Finley, M.D.
Professor of Medicine, U.C. Davis
Chief of Chest Medicine
V.A. Hospital, Martinez

TNF: cc
Enc:

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Copies to:
Drs. Jacobson, Liebow, Sommers, Gardner and Hackett.

3/19/75